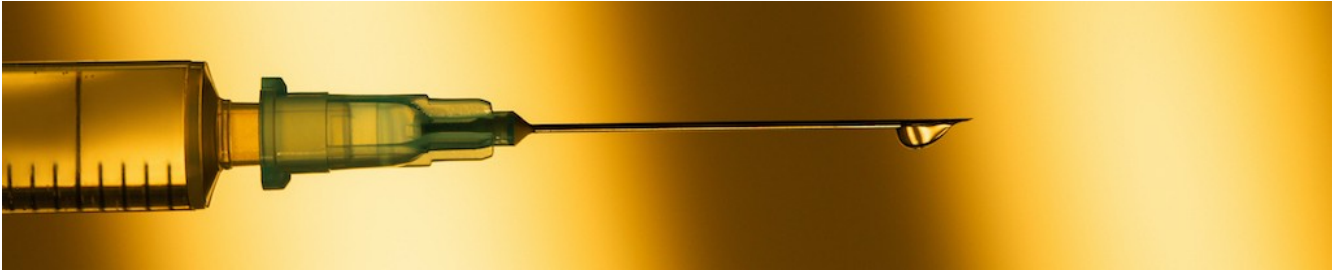


Can vaccine hesitancy be rational?



“The news about this new variant should make clearer than ever why this pandemic will not end until we have global vaccinations...”
– [U.S. President Joe Biden](#)

“There’s all these anti-vaxxers now. They are nuts, they are nuts.”
– [British Prime Minister Boris Johnson](#)

“Those people are putting us all at risk.”
– [Canadian Prime Minister Justin Trudeau](#)

“Most Germans will be ‘vaccinated, cured or dead’ from Covid-19 in a few months, the country’s health minister has warned...”
– [The Guardian](#), 22 November 2021

[Australia now has internment camps.](#) Doesn’t matter whether you’ve tested negative or not, or are vaccinated or not. It is enough if you’ve been in contact with someone who has been infected and do not comply with authority. You have no legal recourse.

And the list of [qualified “vulnerables” is shrinking in Australia.](#) Documented life-threatening allergies will *not* exempt you from the vaccine.

“The science is in.”

There is widespread consensus in the scientific, specifically, biomedical, community. The most prestigious and accomplished members of that community have spoken. And our duly democratically elected leaders are listening and implementing policies based on this science. Our role as lay people and citizens is to attend to the directives of these authorities. The biomedical consensus is that we are in

Philosopher of medicine Maya Goldenberg’s work on vaccine hesitancy came to my attention too late to discuss in this writeup. It is well worth a listen: “War on Science? Death of Expertise? Rethinking Vaccine Hesitancy | PERITIA Lecture,” Streamed live on Oct 5, 2021.

a struggle against a devastating biological threat to the global human community. The only hope we have of confronting this threat is to unite in solidarity. We do not have the luxury of time to wait until every imaginable quibble that may be raised has been addressed or settled. We are in an existential emergency and must act on less than perfect information. But we have every reason to

trust the recognized scientific consensus and the governmental forces that have mobilized to enact the most considered strategy available to us: *near universal vaccination...*

With this “dominant narrative” as background, it may seem impertinent to ask (but philosophers since Socrates are no strangers to impertinence), along with Cambridge philosopher [Stephen David John](#), the modest, but fundamental, question: *Can vaccine hesitancy be rational?*

We draw heavily on two overlapping video expositions of his case, titled, “Testimony, rationality, and Vaccine Hesitancy”: [a shorter presentation](#) and [a longer, more detailed one before a panel of French scholars](#). The latter, especially, is recommended as an excellent example of how philosophical cases are hashed out in discussion. John seems to move from an “I am not sure” in the longer, earlier one to a nuanced tripartite answer in the second, recorded a few months later: “*Yes, sometimes, and this is a giant problem.*”¹

What follows is an attempt to unpack a critical assumption leading up to John’s conclusion. Information that would quell hesitancy is not forthcoming:

Given the way the world is organized, trust in the relevant authorities is not *obviously* less precarious than the supposed biological threat.

Clarifying the question

First, **the question addressed** on this occasion is *not* “is vaccine hesitancy rational?” But “*can* it be?” The “is” question, the factual one, cannot be assessed without reference to empirical investigation, without probing what biomedical science has to say about it and the culture in which this science, especially, is embedded. We will do that as a separate topic later as it involves looking closely at the history and philosophy of science – biomedical science, epidemiology and virology, specifically.

The more basic logical “can” question is answerable with little scientific understanding. It is a question of deductive and inductive logic. Historical awareness and basic critical thinking skills suffice. It will be our focus here.

Second, is **hesitancy**² to take the vaccine compatible with *taking* the vaccine? Yes, absolutely. One may have misgivings about a course of action and *still* take it. People often make major life decisions hesitantly, decisions involving commitments to significant others, careers, where to live, etc. are often preceded by perfectly reasonable hesitation. Affirmative decisions are made often *in spite of* hesitation.

Yet, the importance of a decision is itself a call for deliberation, and deliberation entails a measure of hesitancy. Responsible deliberation often demands investigation which takes time and effort. Hesitation is perfectly rational in proportion to the gravity of the decision. While I may hesitate before deciding whether I prefer chocolate or vanilla at the ice cream shop on a given occasion, the situation is not one that calls for mounting an elaborate defense of the hesitation.

Further, one may overcome personal hesitancy and act, but not to the point of recommending that one’s choice be universal. Just because, for me, given my circumstances, what I know of myself, etc., I have

1. The core of the argument put forth in this piece is due to John. However, many of the philosophical asides we make are not necessarily attributable to him. Please consult his presentation for his views.

2. [Cambridge Dictionary](#): “failure to do something immediately or quickly because you are nervous or not certain”.

decided to take a decision, does not mean that I think *everyone* in any circumstance should take it as well. Just because *you* have decided to marry someone, we mustn't conclude that you think it is a good idea that *everyone* marry that person.

Next, the question is: is it ever **rational** to be vaccine hesitant? The *cause* of (as opposed to the reason for) hesitation may have little to do with rationality. I may partake in a set of beliefs or have values that preclude or run counter to certain actions or choices. These beliefs or values may or may not be rational, and even if they are rational, my decision to adopt or cite them may or may not itself be rational. That would be a separate question, one about *me* (perhaps to do with my personal history) – not the belief or claim, *independent* of any reference to me. But, sometimes, our decisions are meant to suggest more than personal proclivities. They intend to make larger claims, that is, are *reason-sensitive*. I am prepared to give reasons that are supposed to have appeal *beyond* merely my case. Having thought long and hard about a matter, and settled on a view of it, sometimes I may be prepared to give reasons for believing or acting accordingly, and *also* think my reasons apply to others in some degree.

For present purposes, to be “rational” will mean that one is *sensitive to giving reasons for one's decisions or actions*. *Giving* reasons implies there are *others* involved. (I do not need to give reasons to anyone if I am alone on a desert island for anything I do.) Rationality, in this sense, means, at a minimum, that one's reasons are not self-contradictory and that they, to an extent, cohere with one's whole belief system. The consistency and coherence requirements are a function of occupying a place in a community that demands those of me. Reasons are beliefs or claims offered as justification to others *and* yourself (to the extent your identity is, at least, partly socially constructed), and which are genuinely believed by you to be convincing. They need not *actually* be convincing. It suffices that they are put forth for that purpose in good faith.

However, for good faith to be credible, the reasons must also be sensitive to the belief systems of those before whom one seeks justification – they must be sensitive to *their* belief system, but not *necessarily already part* of their belief system. Belief systems, yours and/or theirs, can sometimes stand revision.

The problem

It is one thing to act for the general good and another to act for your own good. The reasoning back of these motives we will call “moral” and “prudential” rationality, respectively. Moral rationality is the use of reason to serve the good of all. Prudential rationality is the use of reason to serve your own ends. It is a general psychological fact that prudential rationality is the more potent of the two and easily out-motivates moral considerations when they conflict. Ideally, you want the two motives to align. You are more likely to get compliance this way, with less hesitation and friction, and with more durability and reliability. From this, several strategies can be derived and harnessed to direct mass action in a salutary direction.

For purposes of engineering compliance, there are two ways in which prudential and moral motives may align for a population of the rationally-capable:

1. Information known to the population may, in fact, support *both* kinds of rationality: a course of action may *actually* be prudential *as well as* morally rational.
2. Information known to the population may *merely appear* to support both kinds of rationality: a course of action may *seem* to be prudential and morally rational – irrespective of whether it is.

Drop the “rationally-capable” condition and two more paths come into view:

3. Compliance may be secured without pretense to rational cooperation through threat of physical coercion.
4. Compliance may be secured without pretense to rational cooperation through fear of social, psychological, or economic consequences – forms of suasion shy of physical coercion.

The first strategy for achieving compliance, though perhaps most desirable, is, by far, the most difficult to achieve. It requires that many scientific, historical, and cultural contingencies come together just so. A lot has to be working right for this to work. We will return to focus discussion on these contingencies and how they militate against the ideal motivational alignment later.

The third is objectionable, on its face, due to modern democratic sensibilities – on the assumption we still take these seriously.

The fourth is more viable, more subtle, but *also* an affront to democratic sensibilities, the more sophisticated ones, at least. This approach is difficult to explicitly avow in a society that has elevated human dignity, the rights to a high level of autonomy supposed to flow from that dignity, and the free-flow of information requisite to the realization of autonomy through exercise of those rights.

The easiest path is the second. It is what most nations have (thus far³) favored in responding to the current pandemic. It has dictated strategy in motivating the measures in response. It exploits human susceptibility to fear and psychological malleability toward ends that are deemed by some to be justifiable on pragmatic grounds. (“Something must be done. This is something. Therefore, we must do it.” – a logical fallacy known as [Politicians’ Syllogism](#).)

However, the deliberate vagueness, if not obfuscation, associated with this second path can fail to be effective (perhaps, because people, in general, either simply are *not* sufficiently “rationally-capable or inclined,” or because they are *too* curious and *too* responsible to shirk a perceived epistemic duty to ferret out reasons to question the official narrative). When this happens, the fall back seems to be some form of the fourth strategy as a method of engineering compliance – the method of “civilized coercion” or “nudging” (for example, as described by economist and Nobel Laureate Richard H. Thaler in his highly influential [nudge theory](#)).

Civilized coercion or nudging has an interesting feature. It extorts *responsibility from the coerced for whatever consequences result from the coerced decision*. It manages recrimination. If things go well, the paternalism will seem justified in hindsight. If they do not, *you*, the coerced, likely will be left

3. This may be changing. Movement in the direction of the fourth, more coercive, path is discernible. Consider what is happening in [Austria](#), [Germany](#) and [Australia](#).

holding the bag.⁴ *You* will be told that *you* agreed to this, *you* had options, *you* might have chosen to face the consequences of non-compliance. It was *your* decision, *your* fault... How often do powerful institutions⁵ admit error *at scale*? How often do they make meaningful restitution *after the fact*? If only individuals could partake of such immunity from facing the consequences of their mistakes.

One may be left wondering whether being physically strapped down and forcibly vaccinated is not the more humane way of being coerced. At least, then, the historical record would more clearly show that you were never complicit.⁶

Again, *for now*, we will assume the dominant narrative is correct, that the vaccine is helpful, or at least will not be the cause of more harm overall than it prevents when the history of the times is recounted. We assume that there will be no catastrophic consequences of mass vaccination with the current crop of vaccines. Which leads to the question: *why the need for institutional immunity*? Why cannot “power concentrations,” public and/or private (big pharma/big government), be held accountable for error? The science is in, the very best we can muster, its recommendations are being administered under the guidance of the best political will in the world. Is there really *that much* distrust in the human capacity for understanding that sometimes risks, as well-advised as possible, *must* be taken? Are there not enough justice-loving people in the world to insure that fairness will prevail in the end, sufficiently many that the genuine good will of authorities *will* be recognized for what it is and taken into consideration when the time comes to hold them accountable? Will not their heads roll *justly* in the *unlikely* event they roll at all? They have so little faith in us. Why should we any more in them?

“Take the vaccine. There is nothing to fear. We are all in this *together*.” The recommendation may be wise. The conviction perhaps true. But the last claim is unconvincing.

...

Vaccine hesitancy may follow rationally because the situations the strategies listed above seek to realize are either not achievable or – if achievable – unacceptable. A breeding ground for rational hesitancy results. This a grave problem, given that we are *determined* to vaccinate everyone. (We will assume for present purposes that the decision to carry out a program of universal vaccination is itself rationally justifiable on a purely factual or scientific basis.⁷ The immediate question is not its factual validity but its practicality.) The problem, in a nutshell, is that we are forced to violate one or the other

4. Listen to the story of [Betty Pezzimenti](#) who is being forced by the Australian authorities to choose between impoverishment and a choice that in the view of her doctors very likely will result in her death. She is a paradigm case of one of those vulnerables we are being adjured to protect by cooperating in universal vaccination. We are being asked to take the vaccine, if not for ourselves, at least for the sake of people like her. Yet the state has decided that being a well-documented “vulnerable,” as she is, is no excuse for not taking the vaccine.

5. Public and private governments, alike. The “elected” no less than the stockholder varieties.

6. See, for example, [this short documentary](#) about the situation in Austria and the world’s first *mandatory lockdown for the unvaccinated*. Why not make the vaccine mandatory instead of the circuitous exercise of state power designed to implicate potential victims of a mistake? Austria? Didn’t something like this happen there before in 1938? (*Update*: within a few days of the mandatory lockdown, the vaccine was made mandatory.)

7. The assumption will be dropped and its justification addressed when we look at the relevant science and its historical and economic environment as a future topic.

of two widely held ethical principles: respect for rational autonomy or the paramount importance of public health.

Something like the problem sketched above falls out of John's discussion on the rationality of vaccine hesitancy. His conclusion is that vaccine hesitancy can, indeed, be rational, both on prudential and moral grounds. As he puts it, the answer to the question is "Yes, sometimes, and this is a giant problem." We examine each part carefully later, but briefly:

1. "Yes," because no rule of rationality precludes hesitation under conditions that plausibly obtain in the current situation. Quite the opposite: hesitancy, before *important* decisions, is nearly *always* rational.
2. "Sometimes," because obviously not all cases of hesitancy make sense. Regarding *vaccine* hesitancy, in particular, the known *highly* vulnerable subset of the population – *with no other options and far less to lose than the less vulnerable* – stand to risk much by hesitation.
3. The existence of *rational* hesitancy is an indication that the organization of relevant institutions and practices is gravely flawed. The goal should be to eliminate *irrational* hesitancy and *only* that. But, as we will see, John's argument implies this has not happened, at least, regarding hesitancy to accept the *current* crop⁸ of Covid vaccines.

When to defer

How much to hesitate rationally leads to ***the problem of deference***. How much investigation is demanded of the responsible deliberation entailed by rational hesitation? When do you concede that it is not practical for you, yourself, to acquire the expertise necessary? When is deferring to the expertise of others rational and responsible? Reasons for deference are not all obviously virtuous. Just because someone knows better than you does not mean you should defer to them. Deference from fear, laziness, infatuation, etc. is not especially impressive. Just because untruths someone told you resulted in enhancing the quality of your life does not mean you were justified in accepting the lies without quibble. Or so one may argue.

When to defer depends on the importance of the matter and available capabilities. There is arguably a moral and epistemic imperative to put forth as much effort to understand an important matter as is possible *for you*. You, then, have to know yourself and situation well enough to gauge how much effort that is. For some, those who can, it is imperative to exercise their capabilities to the max. A thoughtful, experienced, reasonably well-educated person, fortunate to have the time and resources, is under some obligation to investigate the received expertise and ask: Are the experts credible? Is there sufficient "evidence" to believe what is put forth by experts as "evidence-based"? Moreover, these supposed informed and thoughtful persons owe others the benefit of sharing what they learn.

You do not need special or professional expertise to do this. You may begin by acknowledging that you were not born yesterday, that you have been in existence for awhile and sufficiently awake during that

8. See Appendix note below on "Hesitancy as a function of development techniques."

time to have noticed how humans behave, what they say and do, and what moves them especially under duress – and, from these observations, drawn sensible inferences.

Yes, it is a very good idea to seek out and listen to expertise – as much of it as possible. *All of it from all sources*. And when there is disagreement among experts, this should be given salience. It may mean the matter is difficult even for the most knowledgeable. It may mean something other than pure expertise is in play. It may, of course, be a mix of these – both intrinsically difficult and motivationally-complicated. It is not just to experts we should defer when we should defer to them, but, also, to our suspicions. Provided you arrived at your *suspicions* by attending carefully to the testimony of experts *and* your experience *and* native capabilities, these too require a seat at the table of your cognitive negotiations on what to believe and how to act.

Thus, the path to *rational hesitancy* should be clear. Hesitancy is perfectly rational when it results from this process. But does this describe most of it?

Lay and elite hesitancy

Is *rational* hesitancy common enough to factor in public policy? John at one point distinguishes between *lay* and *elite* vaccine hesitancy. We have been describing the latter. Is this *rational* sort so rare as to be negligible? Isn't *most* suspicion of expertise mere block-headed stupidity or ignorance?

We will not have much to say about lay hesitancy, per se, at least of the stereotypical sort associated with exceptional ignorance.⁹ We gather from standard media sources this is the only kind there is. Earlier we alluded to two sorts of the vaccine hesitant: those simply *not* sufficiently rationally-capable or inclined and those *too* curious or *too* responsible to shirk a perceived epistemic duty to ferret out reasons to question the official narrative. These are extremes, of course. Vaccine hesitancy is seldom so epistemically demarcated, or incorrigible, or virtuous – just as with vaccine compliance. Most people muddle on with their lives as best they can and do not have the time, energy, or resources either to pause to question the official line on vaccine uptake or to fully understand why it is the prudent and socially responsible thing to do:

*They do what those around them do – the bulk of the compliant and the hesitant, alike.*¹⁰

The compliance of most of the compliant is *no more or less informed* than that of most of the hesitant. The compliant because of what was just stated: they almost congenitally defer.¹¹ The hesitant, because, perhaps, these imbibed value systems the authorities were only too willing for a long time to have them believe in other contexts. For instance, to motivate the funding and fighting recent idiotic wars there

9. The kind, say, of those who considered drinking bleach as a Covid treatment because a recent President of the United States suggested.

10. S. D. John, at one point in his talk, expresses perhaps a tinge of guilt or remorse at having been less epistemically responsible than might become a professional social epistemologist when he proceeded, almost unthinkingly, to vaccinate his own children at the request of school authorities. Should he have researched the matter a bit more before deferring so readily?

11. As with "[optimism bias](#)" there are near obvious evolutionary reasons why most people defer, few questions asked. There is wisdom in doing what the masses do, as Sir Francis Galton famously noticed – maybe a bit better than half of the time. Optimism is thus naturally selected for. But then, as a recessive trait, pessimism *also* survives. For similar reasons. A not insignificant part of the time stupidity goes pandemic. The pessimist then has the advantage.

was much talk of threats to “freedom” and “democracy.” Many of the *current* compliant were among the hesitant *then*. Should it be surprising that social and governmental encroachments on individual *choice* concerning matters of one’s own health should be met with such resistance? (Whatever happened to skepticism of government invasiveness on the subject of abortion? “*My body, my choice.*”) And why should we wonder that *trust* in democratically-elected leaders is at a historic low when life-crippling regulations and policies are foisted upon large segments of the population without consultation or transparency – merely on the recommendations of health regulatory institutions in the grip of a biomedical industrial complex with global reach?¹² (We have addressed the topic of [captured governing institutions](#) on several past occasions. The subject is hardly novel or arcane.)

Perhaps, if “freedom” and “democracy” had not, in recent history, been so wantonly touted as values worth great personal sacrifice, we might now have an easier time motivating people to do ostensibly the “right thing.” Those values *either* were, and are, equally as paramount as personal health and social solidarity – *or* they are not. If not, we have been lied to for a very long time. The suspicion that such values are no more sincere now than history shows they were then can result in a climate ripe for distrust and hesitancy.

A sense of this, we suggest, can make itself felt *without* it needing to be the case we are among the privileged few willing and able to indulge in epistemic responsibility – the hesitant elite. Even the very unremarkable, non-expert, non-idiot may be excused for harboring misgivings.

Reasons to hesitate

John describes several lines of reasoning that may motivate hesitancy. He argues such reasoning can emerge from at least four distinct directions: common sense, anthropology, economics, and philosophy.

1. Common sense

We have already mentioned above in passing that *hesitancy before important decisions* is as **common sensical** as we may care to imagine. Either a decision is *not* important, in which case, impulsiveness or habit is excusable – or it is, in which case, *not* to hesitate is straightforwardly and epistemically, if not also ethically, irresponsible.

2. Anthropology

Anthropological work has shown that actual cases of vaccine hesitancy in communities has often presented as perfectly rational. What could be more rational than to learn from past experiences? *Historical induction* is a name philosophers give this mental trick. As David Hume famously pointed out three centuries ago, we seem unavoidably inclined to have future expectations having seen event B follow on event A with great regularity. We expect B to happen next time A happens. If thinking this way were not legitimate, scientific practice would be dead in the water. Anthropologist [Melissa Leach](#) studied Polio and Ebola vaccine hesitancy in sub-Saharan Africa and found that skepticism among the

12. No “conspiracy” theorizing required. Fear, greed, and stupidity, in toxic concentrations, have been sufficing, since time immemorial, without the premeditation that such theories imply. Ask any serious historian. The concentrations are not confined to the evil cabal over there... There is something called the *moral* problem of induction. It involves contributory negligence. The old saw, “fool me once, your fault; twice, my fault” captures it. The victim-hood excuse expires quickly.

indigenous populations concerning *the efficacy* of the vaccines was not particularly in evidence. Rather, these communities had witnessed time and time again miserable implementation with disastrous results for the stability of the local culture whenever “well-meaning” outsiders entered the scene with ill-conceived programs to better the health of the locals. You cannot just drop from the sky and fix culturally-embedded problems with your tech-fix. A great deal of preparation informed by cultural understanding and sensitivity must precede and accompany cross-cultural intervention.

Another example of “well-meaning,” even philosophically-equipped, self-touting “effective-altruist,” institutions failing: The Bill and Melinda Gates Foundation once sought to eliminate malaria by dropping massive quantities of mosquito netting on African communities whose way of life they apparently took few pains to learn about.¹³ During predictable food shortages, the *fine-meshed* nets were used for fishing. The nets were extremely effective for trawling protein from the water. *All* the fish were caught, not just the mature, but hatch-lings as well. The water was depleted of future catch. Starvation loomed. Were these communities crazy, irrational, etc., to rank starvation a more imminent threat than malaria? What real choices were they presented with? Who, with their all their cultural and technological sophistication, should have guessed this?

3. Economics

Prudential rationality is a notion from *economics*. Assuming we are not importing extra-economic moral considerations into our decisions, most of the time we are not faulted for pursuing what seems in our best interests. This means we do not *needlessly* sacrifice those interests. If the story ends there and if the reason for *my* getting vaccinated is to prevent *my* suffering from the virus, then if I can achieve this end *without* making *any* sacrifices or taking *any* risks at all, why should I make those sacrifices or take those risks (however small they might be)?

Suppose nearly everyone around me has taken the vaccine, what’s in it for me to take the vaccine? I can’t get infected by the vaccinated (and the unvaccinated, by hypothesis, are scarce) – unless, of course, I may *still* get infected by the vaccinated. But, in that case, what is the point of vaccination?

And, if the vaccine *only* minifies risks of hospitalization and death, not infection, we cannot say I have *any* moral obligations to take the vaccine since the vaccinated are, by hypothesis, *themselves* already protected from those risks. What do the vaccinated have to fear from the unvaccinated? If I, as an unvaccinated person, choose to run the risks, it is only *my* interest that is at stake, not *theirs*. It’s *my* business. I am left free, rationally so, to take any risks I please. After all, I may have different preference rankings from the vaccinated and in no way are they affected by what I do or don’t. Nothing requires compromising my *prudential* rationality. And, as we just argued, *moral* rationality is irrelevant.

And, if it is not the vaccinated who need protection from the unvaccinated but *others* among the unvaccinated, who are these? They must be, first, those *willfully* unvaccinated and these are not in a position to complain; second, those who, because of factors possibly beyond their control – the immune deficient, the comorbidly compromised, the elderly, etc. – are left *unwillingly* vulnerable. This second group – what proportion of the population does it comprise? Surely, one not so large that the course of

13. See “[Meant to Keep Malaria Out, Mosquito Nets Are Used to Haul Fish In](#),” NYT, 2015.

human development must be disrupted on such a unprecedented scale for their sake? *At least not before much effort has gone into actually mitigating their vulnerability where possible, or, failing that, targeting isolation and protection measures at them, where they would do the most good at the least costs to all.*¹⁴

It makes sense to target, for example, *experimental* vaccines at populations for whom *long-term* adverse effects are *not* relevant. In the “long run” these groups “are all dead,” to paraphrase a line from John Maynard Keynes. The current vaccines actually have been tested only for *short-term* efficacy and safety, not for long-term. As for everyone else, those of you with relevant “long run” expectations? These vaccines have *not* been tested on the likes of you.

The “free-rider” problem arises whenever we, as individuals, are in a position to avoid paying the costs of a collective good while still reaping benefit from it. If we are worried about free-riding, it is only rational *if* we have *extra-economic* motivations – or *ought* to have them. I take it we do have such motivations. But with this thought we take leave of economics. Economics alone offers no compelling reason to quash hesitancy.

In short, as far as rationally self-interested economic theory goes, my choosing to take the vaccine has *no* implications for others because all that matters is that the vaccine hinders *my* infection risks sufficiently to outweigh the sacrifices *I* make in taking it or the risks *I* am subjected to by taking it, however insignificant these may be. If this outcome seems, nevertheless, unsatisfactory, if it is true that my choice *does*, indeed, have implications for others because *either* my not taking the vaccine risks straightforwardly *their* health and lives, *and/or* there are extra-economic constraints on me, then *moral* aspersions are being cast: something to the effect that I am obligated to take the interests of others into account. If so, we need an argument that goes beyond economics. If you want to say we owe others the trouble of taking the vaccine, we must appeal squarely to...

4. Moral philosophy

So what does *ethical theory* have to say about rational hesitancy? Insofar as hesitancy is motivated by uncertainty and the enemy of the latter is more information, we must investigate. Or risk revealing ourselves *culpable* fools and *mean* ones, to boot. All moral theories (the major ones, at least – the deontological, consequentialist, virtue, and moral sense families of theories), however fundamentally at odds with each other, share a demand that the information framing a choice be accurate and transparent

14. For example, Sweden, early in the pandemic, in the Spring of 2020, might have done better to have protected the vulnerable in their elder homes. *As widely reported*, they failed and suffered a notably high rate of deaths per million of population. How did Sweden react? They *targeted* protection measures at this vulnerable cohort and allowed the rest of society to function very close to *normal*. They did a rare thing. They learned from a mistake. Since September of that same year to as of this writing, the Swedish strategy of Covid-related death containment has shown itself remarkably successful by comparison to the fitful and hapless measures taken in much of the rest of Europe and North America – [*as not so widely reported...*](#) Concerted effort to cherry-pick the stories we tell is ok so long as we have equally accessible sources which can be trusted to cherry-pick the other way. Absent that condition, institutional trust is eroded. What do the *New York Times*, *The Washington Post*, the BBC, NPR, Google, Facebook, Twitter, the NIH the CDC, the WHO, etc. have in common? The fact that they have *too much* in common. To the historically informed and critically minded, reporting has *never* tracked the course of reality with such lockstep – outside of historically infamous times and places.

to those who must make it. If this epistemic demand is not met, these theories conclude in unison that something is very wrong.

But we *never* have complete information. And what we have is *never* as purely-motivated, either at its source or in the way we appropriate it, as these theories (deontology, especially) may wish. In the face of this reality, we are nevertheless, sometimes, called upon to decide with urgency.

In the last section, we talked about how *rational* it is to look out for one's interest as well as how *natural* it is. Ethics, almost by definition, pits itself against a large share of our natural tendencies. Maybe it is true that a modicum of beneficence is built into us as David Hume, Jean Jacques Rousseau, Ayn Rand, other moral sense theorists, and care ethicists believe, and that without such an innate penchant for good, ethics could not get off the ground. But the bulk of ethical theory has traditionally taken, for good inductive reasons, psychological egoism as a starting point. Curbing it has seemed most pressing.

So, in order to motivate humans, *as we know them*, to sometimes override their perfectly reasonable but sometimes *amoral* (if not *immoral*), prudential tendencies and decide instead with the best interests of all affected and concerned in view, moral philosophers contrive conceptual tools to help picture what is at stake and how we may attain an impartial and perspicuous view of the situation. Famously, John Rawls introduced the idea of a “veil of ignorance” behind which we might imagine making just decisions of grave moral import. The ignorance, he describes, prevents us from too quickly rationally defaulting to self-interest. Our interests certainly matter but so do those of others. How do we *trick* our normally self-focused selves to see this long enough to make decisions *fairly* for all concerned?

Rawls paints us into a scene (“the original position”) from which we will make the rules of a world into which we are to be thrown without knowing in advance where in that world we may land and what awaits us there as individuals. He assumes no more than that we are rationally self-interested and will want to hedge our bets. It is perfectly rational to hedge our bets. From behind a “veil of ignorance,” he believes, we would be motivated to design a world where, if worst comes to worst and we come out big time losers, our lives would *still* be worth living. In other words, the situation where we come to deem *never having been born* to be the better option (if it is coherent to think it an option at all) would not happen. Call it a *universal basic condition of being in the world at all*. Below this threshold you may not fall. We would choose to build-in guarantees to that effect – a safety net below a space where gains and losses are played out and risks are real but not catastrophic. This would be a *just* world, Rawls thought, because it would insure two fundamental values, *freedom* and *security*.

The world you will decide upon *behind the veil of ignorance*, Rawls reasons, would be structured by corresponding principles such as these:

1. You are to have the greatest freedom possible consistent with others having it too.
2. Inequalities that emerge from the exercise of those freedoms, inevitable as they are to motivate progress, *must also* contribute to improving the lot of the least fortunate.

The first insures a sense of liberty is preserved. You would retain a field for exercising your autonomy, one of the two fundamental values. You will have elbow room in which you may try your hand at augmenting your happiness while, realistically, accepting that risks are involved in the choices made by you and others.

But, the second principle acknowledges you are *never* the sole author of your starting position, and only *partly* of any succeeding status you attain. You enter the fray with advantages and disadvantages and hence cannot entirely claim or shirk responsibility for what happens. Your basic abilities are part of the starting conditions. Since, in this game, inequalities are inevitable, some will fare better than others. But safeguards are in place. The inevitable inequalities must serve the overall justice of the picture. If inequalities must be tolerated, given no one is *fully* responsible for where they start or end up in the scheme, these inequalities *must* conduce to augmenting fairness.

“Justice” takes account of *both* luck and merit. “Justice” means that if some *suffer* from inequality, their suffering must be in part – but *only* in part – justified because the inequality promotes a more just condition for them than would be the case without the inequality. If a surgeon is paid more than a janitor, this is justified not only to motivate the effort to become a surgeon but also so that the surgeon’s services are available to the janitor. An income disparity cannot hinder the janitor’s access to the surgeon’s services. If some people *benefit* from inequality, their benefit must be justified because the benefit serves a conception of justice built on the assumption that all status is the result of equal contributions of luck and merit. If some are rich in this picture, the world had *better* be a better place precisely *because* – not accidentally – they are rich.¹⁵

The poorest must be less poor *because* the rich are rich. They must be made *not more* poor. Failing this condition, a concentration of *impossibly self-earned* wealth *cannot be tolerated*. In Rawls’s ideal world, if the rich get richer, it is because the poor get richer, too.¹⁶ In this way, the distance between the luckiest and unluckiest cannot get out of hand. In fact, income disparity reduction becomes itself a psychological necessity or predictable instability and collapse is inevitable.¹⁷ Desert, as a concept, cannot divorce itself from the reality that no single human could possibly merit/earn such vast income for every second they are alive even while sleeping – as the current organization of the financial, political, and legal world permits. No human could afford the expenditure of bodily fluids (blood, sweat, and tears) required to make this rational.¹⁸ It is bounded by an *acknowledgment* that luck, no less than merit, plays an *essential* role in placing us at the socioeconomic coordinates we occupy.

15. There are echoes here of the Medieval concept of *noblesse oblige*, even the ancient notion behind: “To whom much is given, much will be required” (Luke 12:48). Rawls seems to spell out the reasoning behind these intuitions.

16. There is room for interpreting otherwise what counts as *wealth* or what it means to be *richer* than someone else. Construed narrowly, it means *materially* better off. I think this interpretation less defensible than a broader one that leaves open whether one with less material wealth may, in fact, be *meaningfully* richer than someone with more. But I leave this discussion for another occasion.

17. If wanting to *feel* rich is only achievable by actually having more than many of those around you quite apart from its utility to fairness, if this is the motivation for not curbing income disparity, ethics would require this fact of our psychology be treated as vice. Greed is natural. Ethics, again, cannot pretend to be. Nothing connects what is natural with what is good, on this view. Ethics has its hands full. Perennially, so. The only escapes are the hyperbolic paths of [transhumanism](#) or [anti-natalism](#).

18. Locke was thinking of the *origin* of private wealth, not of its destiny.

Otherwise, the world would be *fundamentally* unjust.

Relevant to the topic at hand is the role a “veil of ignorance” tool plays. It is a conceptual tool to curb self-interest, as used by Rawls. But might it be abused?

Dismissing Rawls’ quixoticism for now, can the notion of a veil of ignorance ever be *bad*? So long as it remains a philosopher’s conceptual pipe-dream, it would seem innocuous. But what if veils of ignorance actually occur “naturally”? What if they are recognizable in the course of human civilizational activity?

Application of “veils of ignorance” to public health and the prevention of vaccine hesitancy

John invokes the Rawlsian concept as used in the work of the philosopher Gregory Kavka who explored an epistemic aspect of the veil. Kavka and others drew attention to the fact that, in some form, veils exist and are used to manipulate human behavior. They are not merely hypothetical.

In order to promote certain *widely accepted and uncontroversial* social goods – public health, for instance – promulgating and sustaining a program of mass ignorance may be effective and useful. Because the end is good and urgent, we may think, the means – mass deception – may be *morally* justified. Self-interest, dampened behind a veil of ignorance, can be harnessed to incline more people to do the public-spirited thing. Complete unvarnished truth (even a good-faith approximation) is overrated. It does *not* sufficiently motivate... But such intentional use of ignorance seems ethically problematic.

*Simply put, it means we may, even must, sometimes deceive people en masse to get them to do what is in their own interest.*¹⁹

This leads to a – perhaps irresolvable – ethical tension. Most ethical theories do not condone deception. Deontology, one of the top contenders, finds deception repellent and inexcusable, placing, as it does, a premium on respect for rational autonomy. Kant, in particular, would find no place for it. It is *unconditionally* wrong, *categorically* – consequences be damned.

Consequentialism, on the other hand, may be comfortable with deception, suitably qualified. Provided there are no near or long term intolerable consequences, deception may serve as a tool, useful like any other, for achieving good ends. So it is *this* theory that is directly relevant to assessing the ethical validity of an institutionalized veil of ignorance. What must be the case for a veil of ignorance to be ethically and consequentially justified?

The deception must be directed at an uncontroversial good, and be thorough, epistemically airtight, and sustainably so.

19. Or what it has been determined by an institution is “in their own interest.” The idea is to collapse the distinction between individual and collective self-interest.

What happens when these conditions fail is not pretty. Deeply ingrained counter-intuitions, hangovers from Enlightenment ideals, about the value of unfiltered information are poised to undermine deception and the institutions that rely on it.

To avoid institutional collapse, the challenge is to engineer a robust social structure in which the deception is embedded. This requires that the structure preempt erosive notions that sow doubt, suspicion, or distrust in the promulgated deception. What is acceptable to think must be tightly controlled. The definitions of epistemic notions such as “truth” and “information” must be policed. This might be achieved straightforwardly via authoritative pronouncements asserted as consensus, or by obfuscation and stonewalling attempts at clarification and explanation. In any case, sources of information must be controlled or co-opted. Legitimacy may have only one source and that must be institutionally in-house. This is necessary to preclude an information “underground” from emerging, which left unchecked would undermine the deception and collapse the structure that sustains it.

But if the end is a monumental good, *the well being of all*, isn’t a deception – or better (because less prejudiced way of putting it), an “epistemic construction” – to this end perfectly defensible on ethical grounds? The theory does not presume the possibility of individual or collective perfection. No one of us, nor all of us together in concert, are capable of achieving the proposed good end without the aid of an “epistemic construction.” *We are just not that wise or good*. We need the epistemic crutch of something *less* than truth – “truth-like” but without the perennial instability of an always “under construction” or “in development” truth. Truth suffers from being a *perennial* project. Instead, we need, it is argued, a completed, free-standing structure, not an elevation of tentativity. Truth-like deception fits the bill.

But, again, can such mass deceptions work without eventual institutional collapse? This is important since their *sustainability* is a consequentialist concern.

The veil of ignorance, risks, and the insurance business²⁰

Apparently, so. They may survive pretty well with the participation of a critical mass of those deceived on board with the ignorance. The insurance industry has been cited as an example.

Arguably, insurance serves a public good. Insurance works by enlisting many to contribute small amounts of their resources to a fund that then becomes available to indemnify individuals against *unpredictable*, potentially, catastrophic events. For enough individuals, as things are, insurance is affordable because of a veil of ignorance. If your insurance company had *perfect* or *near-perfect* information on the risks *posed to them by insuring you*, your rates would be determined by this tailored information. But they don’t²¹ and they aren’t. That’s not how your rates are currently set. Insurance companies have only (still) very limited information, mostly about the *subsets* of the population you belong to and their statistical risk profiles, the ones they are permitted to inquire into. They are constrained to calculate on the basis of this.

20. The insurance application is suggested by the discussion between S. D. John and [David Teira Serrano](#) in the [longer talk](#).

21. They do have *some* information and, understandably, they struggle with more or less success to augment their access to more. Understandably, also, it is not in the interest of their clients to let them have too much.

With perfect or near-perfect information at their disposal, health insurance companies, for instance, could do a lot better at being “fair,” so to speak. Why should I, who have no congenital illness in my family, a fine medical history, and healthy life style help fund you who don’t have some or any of these things through high premiums? In fact, with perfect or near-perfect information about me, an insurance company would charge me exactly what I would pay if I had no insurance at all and had to pay all my medical expenses out of pocket – plus a little mark-up. It would make no sense for them to do otherwise. Or, alternatively, they would not insure me at all. It is because neither they, nor I, have perfect or near-perfect information on my risk profile that the business works as well as it does. In fact, it is because we, the insurance company and I, are behind a mostly opaque *veil of ignorance* that the insurance business makes any sense at all. Nevertheless, the business works, many get insured, more or less, doesn’t it? The industry relies on the fact of everyone’s being a bit in the dark about what the future may bring. Though the darkness has been traditionally necessary, there is steady effort to illuminate it – an effort, whose end result, to the extent of its success, would be toxic to the business.

Again, ask an individual insurance company what they would like to know about a client. They would like *more* details. How much? Enough to make their risk calculations better than the competition. If they could have *perfect* or *near-perfect* information, wouldn’t that be even better? A moment’s thought should pour cold water on that idea. With perfect information they would be motivated to charge *exactly* the amount to cover their predictable outlay plus a commission. Rates would track risks tightly. In fact, risk would be relegated to being nominal. In fact, “risk” as a relevant concept would practically disappear in the business, replaced with *anticipated* costs. They would know with great certainty how much to charge a client and that would be about what the out of pocket costs would be. Some of the insured would have astronomically high rates, some would enjoy almost no rate at all. No one would be motivated to buy insurance from this company. The insurance company would collapse. Not knowing everything creates risk. Risk creates the need for insurance in the first place. Lifting the veil of ignorance would be catastrophic to risk. The moral of the story seems to be we don’t want to know everything *even if it were possible*. We just want to know enough to put us at an advantage – or at least on a par with others.

The veil of ignorance works to keep *both* the insurance company and me from being too self-interested – to keep us somewhat honest. But more, *ignorance seems essential to preserving the institution of insurance itself*. If I knew something about my health my health insurance company didn’t, I could use this information to exploit the insurance company. If they knew all there was to know about my health risks, why would they take *any* risks for my sake? The industry would collapse if perfect or near-perfect information was available to all.

Some human institutions thus thrive on the existence of pandemic ignorance. The science behind this is called [agnotology](#).

The danger of veils

And what of the case of mass institutional deception to promote our collective health?

There is, of course, a difference between the insurance business and the business of conducting public health policy. In the former, the information is not available – at least not yet. (With the advent of genetic profiles, this may change.)

In the case of engineering an “information climate” required to sustain a health policy founded in this way – on a salutary “epistemic construction,” information available, all efforts at its regulation notwithstanding, is inconclusive, confusing, doubt-inducing, and toxic to trust. Call it “misinformation” if you will, but it is not *effectively* being suppressed. There is a lot of it out there. Confusion and willful blindness reign. Meanwhile, the powers that be conclude that epistemic measures must be taken to enforce solidarity and prime concerted behavior. Thus, they intone, information must be curated. Standing in the way of this are “liberal” ideas about the free-flow of ideas out of which which robust convictions may emerge. These ideas would have the “marketplace of ideas” remain uncured. But we cannot tolerate this “Enlightenment” extravagance in an emergency. Therefore, we must oppose the outdated models underpinning the liberal tradition in which humans are conceived as singular autonomous agents – namely, the notion that individuals may attain some fulfillment or personal purity from *not* being deceived, preserving an epistemic integrity peculiar to them, etc. The problem for the solidarity program is that this classic Kantian/Millian model remains very much culturally alive and potent. Until we rid ourselves of the illusions, if they are that, this model feeds, the epistemic construction underpinning success at realizing an essentially good end, *the well-being of all*, will fail sooner or later.

Hence, the need to *keep the deception tight and sustainably so*.

Needless to say, to those who cling to the “outdated” model, this development is threatening. But those invested in the consolidation model of human interests, however, are also running a risk.

...

The problem is that on top of the damage done to the conception of human nature as viewed from the standpoint of other ethical theories, the mass deception ploy, urged by a version of consequentialism, risks paying a heavy price even on purely consequential terms. It is dangerous for that reason, even if you buy into its consequentialist end.

When ethical evolution happens too fast, trust stumbles... Nihilism crouches nearby.²²

22. I remain agnostic as to whether either the “evolution” or the “nihilism” is a good or bad thing. Perhaps, we exaggerate how much trust there ever was to lose.



“the system is the virus” – San Cristobal de las Casas, Chiapas

Relevant

1. Speech: “[Do Not Give Up Your Rights.](#)” Dr. Julie Ponesse, Brownstone Institute, November 3, 2021. Interviews: “[Professor gives ‘final lesson’ on medical coercion || Julie Ponesse.](#)” Dr. Julie Ponesse was a Professor of Ethics at Huron College at the University of Western Ontario and holds a PhD in Ethics and ancient philosophy. She was fired after 20 years on the job for refusing to take a COVID-19 vaccine. Dr. Ponesse is currently working as the Pandemic Ethics Scholar for The Democracy Fund—a charity that is dedicated to fighting for civil liberties across Canada. Interview by [Alison Morrow](#). Longer fuller interview by [Shaun Newman](#).
2. “[Echoes of covid misinformation.](#)” Neil Levy, *Philosophical Psychology*, 27 Nov 2021. Abstract: Public support for responses to the coronavirus pandemic has sharply diverged on partisan lines in many countries, with conservatives tending to oppose lockdowns, social distancing, mask mandates and vaccines, and liberals far more supportive. This polarization may arise from the way in which the attitudes of each side is echoed back to them, especially on social media. In this paper, I argue that echo chambers are not to blame for this polarization, even if they are causally responsible for it. They are not to blame, because belief calibration in an echo chamber is a rational process; moreover, the epistemically constitutive properties of echo chambers are not optional for epistemically social animals like us. There is no special problem of echo chambers; rather, *there is a problem of misleading evidence (especially higher-order evidence)* [emphasis added]. Accordingly, we ought to respond to misinformation about COVID neither by attempting to dismantle echo chambers nor by attempting to make people more rational, but rather by attempting to supplant unreliable higher-order evidence with better evidence.

Appendix 1: more philosophical sources of hesitancy

Stephen David John touches on two more sources of rational hesitancy: reference class issues and inductive risks.

1. Reference class

When asked why they should take the vaccine, an intelligent person should expect to be informed why they, specifically, are being asked to accept *any* risk, however small, in taking it. If the science tells us that people in a certain class (say, the elderly) to which we belong are especially at risk from serious outcomes if infected with Covid and that these risks are significantly diminished if we take the vaccine, the guidance offered would be clear enough. A sensible case could be made that any risk attending vaccination is worth it.

But, if the science is not clear that all people are in the highest risk class, that in fact there are tiers of risk into which we may be sorted, and that only some of us fall into the tier with the highest risk and so stand to gain most by the vaccine and lose the least – if this describes the situation, it leaves open whether I should believe myself to be included in the class for whom the vaccine is indicated. The class to which the indication refers may not be the class I am in.

So, is the science *clear* about this?

If not, at the very least, this lack of clarity is cause for hesitation. The risks do *not* have to be very high to be *not* worth taking if they don't even apply to you.

2. Inductive risks

It is basic philosophy of science 101 – indeed, an elementary part of scientific training – that science does not truck in sureties. Nothing is ever 100% certain in science. That has not stopped science and biomedical science, in particular, from making great strides in the past century and a half. Biomedical science progresses because it is centered on testing biological regularities for robustness in order to make statistical predictions. The predictions express confidence numerically. They apply to populations at a certain scale.²³ To the extent we can identify with those scaled up populations, we derive useful insight.

When we are not *personally* invested in a scientific result, our appropriation of the results may be extremely functional. *But when are we not personally invested?* Answer: when it doesn't matter. And, to the degree it matters, we *are* personally invested. Might our investment be attenuated sufficiently to permit a glimpse of “objective” results? Science is supposed to have structural mechanisms in place to accomplish just that. Do they work? We want to believe they work better than they do in, say, politics – admittedly, a rather low bar. But the work the results of science does for non-scientists – and even scientists in their capacities as citizens among others – is *unavoidably* infused with politics and the values back of it. It is thus infused because science consumes resources and those resources are diverted from other valued endeavors. Communication of scientific results is deeply problematic because it cannot be practiced in a normatively sterile environment...

...

23. There is no such thing, for example, as rigorous *idio-medicine*: medicine tailored to *your* biology, *your* psychology, *your* genetic makeup, *your* beliefs and preference structure. Such an idea may circulate in some quarters, but it does not describe any current biomedical practice. It is difficult to conceive how it could since, in excluding generality, it excludes methodology.

So, a mother asks a government health minister whether a vaccine is safe for *her* child. What kind of answer may she expect and what kind is she *entitled to* expect?

If a *scientifically responsible* official replies accurately to her question, they will give some percentage less than 100% as the measure of confidence they have for the safety of a vaccine as supported by current science. “In science, we are never certain of anything.” This would be a perfectly sensible answer addressed to an audience of immunologists.

But *to a mother*?

If the health official responds in a scientifically responsible manner to the mother’s question by saying something such as that the vaccine is 95% safe, an overhearing audience of immunologists would be impressed.

But *would the mother*?

Would she be crazy to read this answer as: “No, I am *not* certain the vaccine is safe”? Is she being unreasonable to demand a simple *yes* or *no* to the question as it affects *her* child?

And, if not, why not? Again, to be “rational” means no more than to entertain beliefs and values that do not obviously contradict each other or clash with generally recognized facts about the human condition.

It would clash with widely shared experience to *deny* that, concerning those we have special reason to care about – beginning with ourselves and those near us, we have, and are justified in having, *higher* epistemic standards for critical information than would suffice for a class of persons sufficiently abstract as not to be familiars.

If this clashes with scientific thinking, so much the worse for scientific thinking. But it is not irrational – unless you are willing to go to a place few (even) scientific thinkers are willing to go.²⁴

It may well be that the value system expressed by the mother here conflicts with one more (in some sense) progressive – say, a strict, totalizing, utilitarian one. But that would be to argue from *outside* one widely held conceptual framework (a common sense one) and from *inside* another (a purely utilitarian one). It would not be a legitimate charge of inconsistency... Good luck trying to convince your mother that, from a strict negative utilitarian ethical perspective, she did wrong *not* to abort you when she had a chance. See our discussion of [anti-natalism](#) for why this would follow if we insist on *strict* rationality.

Does a mother contradict herself by demanding *better* than a mere percentage of probability, no matter how high, but always short of the certainty – something a scientist is *never* in a position to offer in good faith?

Unless, of course, the scientist is *also* a politician and invested in swaying opinion as much as informing it.

24. Interpret reason strictly enough to disqualify the mother from it, while staying within a utilitarian framework, and you are faced with one or the other of utilitarianism’s forbiddingly pristine forms: positive (i.e., [transhumanism](#)) or negative (i.e., [anti-natalism](#)). Most scientifically-minded people are not as prepared to give-up all remnants of old-school humanism (or “muddism”) as each of these hyperbolic theories, indeed, are.

And, if the scientist is also a politician as, in fact, many public health officials are called on to be – and, as such, forced to straddle a line between roles involving politically suasive and scientific advisory capacities, the evident strain will be cause for hesitation. It is an occupational hazard of this hybrid political/scientific role that what you say will be met with suspicion. Rightly, so. Why?

Because of induction, the basis for scientific thinking itself. More of us were *not* born yesterday than, it seems, these officials realize. Some of us have been around a while and seen a few things (like the [insurance commercials for State Farm](#)) several times over. An education in history, the history of science, particularly, and the history of biomedical science, even more particularly, would be informing. Science, like politics, has a history and it is *as* checkered with human error and vanity. The difference is that politics has long since lost its epistemic virginity – if it ever had it. Science, like religion before it, as an institution, still exudes an aura of higher expectations.²⁵ Precocious though it is, science has still not fully come of age as a genuine *human* business with all the saltiness that entails. We still want to believe the scientist is a different kind of animal than the political ones we know too well. But we are disappointed.

...

Compare our hypothetical mom with [the case of Tony Blair](#), former British Prime Minister. In 2001, he was asked whether his young child, Leo, had gotten the MMR²⁶ vaccine, then still new (as cited by S. D. John in his talk). When Blair was asked if the MMR vaccine was safe, he replied that the scientists *said* it was safe. Then he was asked if *he* had vaccinated *his* child. He was asked again and again – and refused to answer again and again.

Appendix 2: hesitancy as a function of vaccine development techniques

Hesitancy is rationally pronounced with regard to the *current* crop of messenger RNA and adenovirus-derived vaccines. Here is a [quick comparison](#) of the existing vaccines.²⁷ Of the five listed, only the first three are available in the US at this time. The first two, Pfizer and Moderna, are mRNA vaccines. The third and fourth, Johnson & Johnson and AstraZeneca, are based on a modified adenovirus (a common cold virus). All work by manipulating your body genetically to create spike proteins that are normally found only on the surface of the SARs-CoV2 virus. In that way, they prepare the immune system for confronting the real SARs-CoV2 virus.

These all involve genetic manipulation of the body. They deliver genetic code into the body with the aim of tricking cells there to make spike proteins, and this is what makes them new and experimental compared to traditional vaccines. Traditional vaccines worked by introducing an actual dead or weakened version of the virus. Genetic manipulation is a deeper form of somatic trickery. These new gene-based vaccines have all been associated with rare but potentially fatal or debilitating vascular events. There are several biomedical concerns one may have for being skeptical of these vaccines but I

25. See for instance, “[Scientists are among the most trusted groups in society, though many value practical experience over expertise](#),” Pewresearch.org.

26. The measles-mumps-rubella combination vaccine.

27. A more detailed and updated summary of the status, relative efficacy, costs, and sales of the various vaccines can be found at [Biospace.com](#).

think the most worrying one is the part about “tricking” the body at the deepest level into doing things. This is *new*. If we had decades of experience with this technology, some of these concerns may by now have withered. But we don’t. What else might be these gene-based vaccines “trick” the body into doing? How long will it take before we know? Knowledge of the details is still sketchy. I guess we are going to find out given how many people have already taken these vaccines.

The case for hesitancy is diminished in the case of two new vaccines on the horizon that are far better grounded in basic, well-tested technologies and less encumbered with unknowns than the rapidly developed gene-based ones that everyone is taking now.

Dr. Mobeen Sayed here [explains the biomedical details](#) of the virus and vaccines mechanisms for a general audience, comparing them and discussing why the newer vaccines are more promising. He explains how the Novavax vaccine uses old-fashioned whole particle techniques rather than the highly experimental genetic mRNA vaccines and why this helps it accrue confidence. Such non-gene based vaccines operate in ways that are more understandable and may stand a better chance of complete and longer lasting immunity. Novavax was first announced last year, but the latest news is that there are good results in actual tests, and it is getting closer to being available for humans.

Further from availability, the [EnGeneic](#) vaccine, under development in Australia, is perhaps the most intriguing vaccine on the horizon. Its technology is both old and new. The mechanism of action is better understood and there is good reason to think it safer than that in use for gene-based vaccines. Not gene-based, the [EnGeneic](#) vaccine is also intriguing because, if successful, it may offer biomedically revolutionary methods of delivering medication *very precisely* to needed treatment sites in the body, and *only* those, offering hope of better treatments for many other diseases, even cancer... *safely*: something that cannot be said for sledge-hammer techniques of the current crop of Covid-19 vaccines. This is no small source of vaccine hesitation. At any rate, an excited Dr. Sayed [details it here](#).



*Extended writeup for the topic hosted at
[The Philosophy Club](#) in December 2021*

*– Victor Muñoz
Oaxaca / Seattle*